followed by thorough cleaning with sterile sea water to remove any traces of antibiotics and fungicide and blotting with sterile filter paper to obtain axenic explants;

b) culturing the axenic explants on agar plates fortified with PES medium at a temperature ranging between 20-25°C in the presence of cool white fluorescent lights at about 20-50 μ mol photon m^{-2} s^{-1} irradiance and a 12 : 12 light and dark cycle for induction of callus;

c) excising the callus from the explant after a period of at least 40 days and subculturing the callus on fresh agar plates in the presence of cool white fluorescent lights with 40-60 μ mol photon m^{-2} s^{-1} irradiance and a 12 : 12 light and dark cycle to obtain differentiated densely pigmented oval or spherical shaped micro-propagules;

d) subculturing thin slices of the pigmented callus in agar plates in Provasoli Enriched Seawater (PES) medium containing plant growth regulators, for a period of about 20 to 40 days, in the presence of cool white fluorescent lights of 20-60 μmol photon m^{-2} s^{-1} irradiance and a 12 : 12 light and dark cycle to achieve enhanced somatic embryogenesis and micro-propagule formation in pigmented filamentous callus;

e) transferring the filamentous calli with somatic embryos to liquid PES medium in an agitated condition for morphogenesis and development of young plantlets with multiple shoots from propagules; and

f) cultivating algal biomass on a large scale in the sea by growing the young plantlets in enclosed perforated polythene bags.

2. (Amended) A method as claimed in claim 1, wherein the material for tissue culture is a Rhodophytic marine algae selected from the group of genera of *Eucheuma*, *Gigartina*, and *Chondrus*.

3. (Amended) A method as claimed in claim 1, wherein the material for tissue culture is an algae selected from the group of *Eucheuma striatum*, *Kappaphycus alvarezii*, *Eucheuma cottonii*, *Eucheuma denticulatum*, *Eucheuma spinosum*, *Eucheuma alvarezii*, *Eucheuma procrusteanum*, *Gigartina intermedia*, *Gigartina exasparata* and *Chondrus crispus*.

A1

4. (Amended) A method as claimed in claim 1, wherein the axenic explants comprise 1 to 6 mm long cuttings with 3-4 mm diameter and are selected from the upper or distal parts of the algae.

A2

8. (Amended) A method as claimed in claim 1, wherein the calli is subcultured by growing thin slices of pigmented calli as embedded cultures in agar plates containing 0.3-0.6% agar and made in provasoli enriched seawater medium at 20-25°C in the presence of cool white fluorescent light at about 20-50 μ mol photon m^{-2} s^{-1} irradiance with 12:12 light and dark cycle to obtain a profusely branched filamentous pigmented calli in each embedded block.

15. (Amended) A method as claimed in claim 1, wherein the process of formation of somatic embryos through somatic embryogenesis of pigmented callus is further enhanced by adding plant growth regulators including α-naphthalene acetic acid and 6-benzylaminopurine.

A3

16. (Amended) A method as claimed in claim 1, wherein a harvesting period after at least 60 days can yield a higher biomass than that of a control of parent plants or wherein the biomass yield can be maintained constant and a cultivation period reduced from at least 60 days.

17. (Amended) A method as claimed in claim 1, wherein a two fold increase in growth in fresh weight is achieved over a control of parent plants, without change in carrageenan product yield and gel strength, through micro-propagule formation from pigmented calli.

Please add the following claims.

A4

18. (New) A method as claimed in claim 1, wherein the material for tissue culture is a Phaeophytic marine algae selected from the group of genera of *Laminaria*, *Undaria*, *Ecklonia*, *Eisenia*, *Macrocystis*, *Sargassum*, and *Turbinaria*.